

**WHAT IS CLAIMED IS:** .. ..

1           1. A laboratory analyzer system comprising a base  
2   housing, a sample tray movably supported on the base  
3   housing, holding accommodations arranged on the sample  
4   tray to hold at least two samples subjected to an  
5   analysis, a drive mechanism arranged inside the base  
6   housing and operable to move the sample tray so that the  
7   samples seated in the holding accommodations are advanced  
8   in a stepwise motion along a prescribed track, and at  
9   least one analytical instrument module installed on the  
10   base housing along the prescribed track and operable to  
11   analyze the samples as they arrive at the instrument  
12   module; wherein the analytical instrument module is  
13   installed by means of an at least two-part non-  
14   destructively releasable connector arrangement consisting  
15   of first connector elements arranged at multiple locations  
16   on the base housing and at least one second connector  
17   element arranged on the analytical instrument module,  
18   thereby providing the options of installing more than one  
19   instrument module on the base housing as well as  
20   installing a single instrument module at a choice of  
21   different locations on the base housing.

1           2. A laboratory analyzer system comprising a base

2 housing, a sample tray movably supported on the base  
3 housing, holding accommodations arranged on the sample  
4 tray to hold at least two samples subjected to an  
5 analysis, a drive mechanism arranged inside the base  
6 housing and operable to move the sample tray so that the  
7 samples seated in the holding accommodations are advanced  
8 in a stepwise motion along a prescribed track, and at  
9 least two analytical instrument modules installed on the  
10 base housing along the prescribed track and operable to  
11 analyze the samples as they arrive at each analytical  
12 instrument module.

1 3. The laboratory analyzer system according to  
2 either claim 1 or claim 2, wherein the sample tray is a  
3 rotatable, disc-shaped tray and the drive mechanism is a  
4 rotary drive mechanism operable to rotate the sample tray.

1 4. The laboratory analyzer system according to claim  
2 1, wherein the first connector elements are arranged over  
3 at least a segment of an imaginary circle on the base  
4 housing.

1 5. The laboratory analyzer system according to claim  
2 1, wherein the base housing comprises an upright wall-like  
3 flange with at least a first support surface and a second

4 support surface for installing the at least one analytical  
5 instrument module, said support surfaces enclosing an  
6 angle of substantially 90° with each other.

1 6. The laboratory analyzer system according to claim  
2 5, wherein the base housing has an underside comprising a  
3 third support surface oriented substantially parallel to  
4 the first support surface, and the at least one analytical  
5 instrument module has a mounting portion embracing said  
6 first, second and third support surfaces when the  
7 instrument module is installed on the base housing.

1 7. The laboratory analyzer system according to claim  
2 5, further comprising an energy source arranged in a  
3 recessed channel delimited by the flange and extending  
4 over at least a segment of a circle.

1 8. The laboratory analyzer system according to  
2 either claim 1 or claim 2, further comprising at least one  
3 programmer unit adapted to run at least one predetermined  
4 analysis program on each analytical instrument module.

1 9. The laboratory analyzer system according to claim  
2 8, further comprising a connectable controller device,  
3 wherein the at least one programmer unit is adapted to run

4 at least two predetermined analysis programs and the  
5 controller device is operable to select which of the  
6 predetermined analysis programs is to be run on each  
7 analytical instrument module.

1 10. The laboratory analyzer system according to  
2 claim 9, wherein the controller device comprises a  
3 computer that is operable for the processing of results of  
4 the analysis.

1 11. The laboratory analyzer system according to  
2 claim 10, wherein the computer comprises a key panel that  
3 is connected to the base housing.

1 12. The laboratory analyzer system according to  
2 either claim 1 or claim 2, comprising at least one motion-  
3 controlling arrangement operable to control the movements  
4 of at least one of the drive mechanism and the at least  
5 one analyzer system.

1 13. The laboratory analyzer system according to  
2 claim 12, wherein the motion-controlling arrangement  
3 comprises at least one sample-associated mark on the  
4 sample tray and at least one stationary pick-up device  
5 operable to read the sample-associated mark, said

6 stationary pick-up device being located on at least one of  
7 the base housing and the at least one analytical  
8 instrument module.

1 14. The laboratory analyzer system according to  
2 claim 13, wherein the sample-associated mark is attachable  
3 to the sample tray by means of a non-destructively  
4 releasable attachment element associated with each holding  
5 accommodation.

1 15. The laboratory analyzer system according to  
2 claim 8, comprising at least one motion-controlling  
3 arrangement operable to control the movements of at least  
4 one of the drive mechanism and the at least one analyzer  
5 system, wherein at least one of the predetermined analysis  
6 program and the motion-controlling arrangement comprises  
7 code markings on the sample tray and a stationary pick-up  
8 device, and wherein the reading of the code markings is  
9 performed as part of an initializing step in which the  
10 sample tray is moved by the stationary pick-up device  
11 through a full revolution.

1 16. An analytical instrument module for installation  
2 in the laboratory analyzer system according to claim 1,  
3 comprising at least one instrument holder that holds at

4 least one instrument and is movable to lower the  
5 instrument into a sample and retract the instrument from  
6 the sample; and further comprising a mounting portion  
7 containing the at least one second connector element, said  
8 mounting portion being adapted for engagement with the  
9 base housing.

1 17. The analytical instrument module of claim 16,  
2 wherein the at least one second connector element  
3 comprises at least two fasteners at a horizontal distance  
4 from each other, selected from the group of fasteners  
5 consisting of pegs, pins and screws.

1 18. The analytical instrument module of claim 16,  
2 wherein the mounting portion comprises at least two  
3 mounting surfaces oriented substantially at a right angle  
4 to each other.

1 19. The analytical instrument module of claim 18,  
2 wherein the mounting portion comprises three mounting  
3 surfaces in a substantially U-shaped arrangement.